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VIDEO GAMES AND MENTAL HEALTH

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ABSTRACT

Video games used to be entertainment that could only be accessed in arcades or computer stores. But the development of technology allows it to be easily played through a smartphone with a screen that can be held in the palm of your hand every day. This article discusses the analysis of the relationship between video games and mental health. Nowadays, playing video games is a form of entertainment for many people, but it is often associated with the development of possible negative effects such as aggressive behaviour, depression, and addiction. The aim of this article is not only to examine the negative aspects of video games in relation to mental health but also to show how video games can benefit its players. Although much has been done to investigate the harm and possible adverse effects of video games, the potential of video games to promote the well-being of society is still under-explored and research on it is still being conducted.

1.0 INTRODUCTION

Ever since the first video game "Pong" that was launched by Atari Inc. in October 1958, video games have been constantly evolving and increasing in variety. From the likes of bulky cassette consoles of Atari, Sega, and Nintendo to the current Sony Playstation 5. From "Spacewars!" to the widely played massively multiplayer online role-playing game – MMORPG like DOTA and League of Legends – LOL, video games have gradually become teenagers' choice of leisure activity. Following technological advancement, the intensities and the quality of the video games has also evolved for the better. After the launch of the first MMORPG in Korea in 1995, the number of games and players in these online games has significantly increased. MMORPG offers a huge, detailed, evolving, and revolutionary virtual environment and worlds based on different stories. In the world of MMORPG, players can take up any role that they like, working with a community of players to accomplish missions and goals. Over 70% of gamers play their games with a friend, either cooperatively or competitively (Entertainment Software Association, 2012). The main reason as to why teenagers prefer to invest hours into playing these games is because online video games are a medium where they can seek entertainment, have interactions and some even has the platform to conduct transactions of virtual or real assets. A survey by Statista 2016 has shown that the amount of video gamers in Malaysia has been steadily rising since 2012 to 2014. In year 2012, there were 7.62 million gamers in the country and by year 2014, the number of games in Malaysia has rose to 9.9 million.

While most of the video gamers consist of teenagers, it still captivates people of all ages and genders. Responding to a "playful need", these people have committed most of their leisure time towards video games. Because video games nowadays run on various types of devices like mobile phones, computers and video game consoles, this industry is prevalent all around the world. While it is true that video games can exhibit positive effects on basic mental processes like attention, perception, decision making and memory, the misuse and abuse of the activity may lead to addiction. In the draft of the 11th revision of the International Classification of Diseases (ICD 11), gaming disorder in terms of internet computerized games (online) and non-internet computerized games (offline) has been included as a diagnosis by the World Health Organization (WHO). It is defined and characterized by the dysregulated control over

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gaming, prioritising gaming over other activities until gaming takes over other interests as well as other daily activities and the continuation of gaming even when the adverse effects of gaming have emerged. To be diagnosed as gaming disorder, the behaviour would have to occur severely until the point where it has impaired the personal, family, social, occupational, educational, or other essential areas of functioning over the course of at least 12 months. The issue of internet gaming disorder has its own diagnostic criteria been placed in the 5th edition of the Diagnostic and Statistical Manual of Mental Disorder (DSM-5).

Numerous studies have investigated issues of internet use like online gaming and there are other authors that centred their attention solely on issues related to online gaming like social relationships and functions, impulsivity and mental disturbance, violence and aggression, depression, anxiety attention deficit, sleeping disturbance such as insomnia and poor sleeping quality, as well as overspending on gaming. While there have been studies that investigated the relationship between violent video games and aggressive behaviours, only minor focus has been centred around the possible effects of prosocial games. In theory, games where players support and help each other through peaceful ways would be able to affect both long and short-term prosocial behaviours.

2.0 ADVERSE EFFECTS OF VIDEO GAMES

2.1 Adverse Effects

It has been decades since the interest in media violence effects started to pique the interests of many researchers. It is said that the constant exposure of violent video games may affect the player's behaviour due to the reinforcement of the belief – resolving conflict through hurting others. Numerous studies have discovered significant evidence that suggests the exposure to violent video games can be related to every internal state variable that is identified by the General Aggression Model like aggressive feelings, thoughts, behaviour and physiological arousal.

2.2 Physiological Arousal

According to Anderson et al., (2007), no matter the content of a video game, it brings the effect of increase physiological arousal [1]. This can be since most games are fun, exciting, and challenging. In a study done by Bavelier et al., (2012), they have stated that while there are situations when an increased physiological arousal like heart rate and blood pressure are good, physiological arousal that are consequences of violent media or other sources can augment aggressive behaviour [2]. However, when compared between violent video games and non-violent video games, it was shown in several research that violent video games tend to generate more physiological arousal [3].

2.3 Aggressive Feelings

With the exposure of violent video games, anger and hostility can develop over time. Aggressive feeling can be evaluated using the self-report questionnaires, for example the State Hostility Scale and the Multiple Affective Adjective Checklist. According to several research has discovered that aggressive feeling is more likely to develop when people are exposed to violent video games as compared to non-violent video games [3].

2.4 Aggressive Cognitions

It was stated by Bushman and Huesmann (2006) that aggressive cognition is mostly due to long-term exposure of violent video game which can lead to aggressive behaviour [3]. Even in non-violent video games, the nature of the game where it is exciting can cause physiological arousal and when the game is hard to clear, it can lead to the formation of aggressive feeling. This itself could have indirectly planted aggressive cognitions and therefore influenced long-term effects in the accessibility of aggression-related structures [3]. But overall violent video games would be more likely to directly actuate aggressive knowledge structures as compared to non-violent games [3].

While there are multiple ways to evaluate aggressive thoughts, different measures theoretically have concluded to say that the exposure of violent video games grows the activation of aggressive thoughts and scripts in memory. Among the usual methods carried out to assess aggressive cognitions are the Word

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Completion Task [4], the Implicit Association Test [5], reaction times to aggressive and non-aggressive words [1], the face– emotional recognition task [2], and the completion of ambiguous story stems [1]. While the methods may be different, they all generally have several similar findings. These findings include, video game exposure causes aggressive priming, activation of aggressive scripts and knowledge structures as well as an antagonistic attribution bias as compared to non-violent games.

2.5 Aggressive Behavior

Various techniques and methods were utilized to gauge aggressive behaviour. To gauge the aggressive behaviour, the methods utilised were by observing children at play [6], doing reports by oneself, parents, peer and teachers as well as standard laboratory paradigms [6]. The results obtained from these methods have elicited strong support for the development of aggressive behaviour comes from exposure to violent video games. In the end, most of the studies have discovered that violent video games can cause escalation and development of physical aggression [3].

2.6 Depression

A study done by Tortolero et al., (2014) has found that playing violent video games for a significant amount of time every day over a long period is markedly linked with depression in the preadolescent youth [8]. Their study calculated the number of constant violent video games exposure with relation to the dichotomous items from the Major Depressive Disorder Scale of the DISC Predictive Scales. The features included lack of interest in activities, lack of pleasure, low energy, concentration difficulties, low self-worth, and suicidal ideation over the past 12 months. Altogether, they found out that students who played high-violence video games for more than 2 hours a day notably had more depressive symptoms as compared to students who played low-violence video games for less than 2 hours a day. Even with the results of their study, they came to think that it is possible that students who elicited more depressive symptoms may favour playing video games that contained more violent content. Nevertheless, the degree of association was minor therefore a relationship for the cause could not be inferred. However, due to the increasing large number of youths who are playing violent video games, it is said that these small effect sizes could still be significant in terms of practicality.

2.7 Addiction

In a study done by Marzo et al., (2019) they have investigated the dependence of video games in pre-adolescent and adolescent students by using the Game Addiction Scale (GAS) as well as other factors like gender, age, education level, daily gaming time and frequency [9]. They used both the Monothetic and Polythetic GAS structure. By the Monothetic structure, only 1.93% of the students were under the classification as problem gamers which is lesser as compared to other studies for example in [8] who concluded that 2.3% of the participants in that study were under the classification problem gamers. Unfortunately, according to other authors, this percentage undermines the pathological players. As contrast to when the Polythetic structure was use, they found that 37.46% of the students were under the classification of problem gamers.

3.0 BENEFITS OF VIDEO GAMES

According to Granic et al., (2014) they have stated that to understand the impact video games may have on the development of children and adolescents, a more impartial perspective is required [10]. We not only investigate the probable negative effects but must also consider the benefits of playing video games.

3.1 Cognitive Plus-Point of Gaming

It turns out that clashing with the usual beliefs where playing video games is lazy and sedating intellectually, playing video games has the potential to promote a variety of cognitive skills. This is especially true in the context of shooter video games where they are often labelled as “action” and violent games. This deduction is backed by evidence from a study in [2] where they recruited naïve games and randomly allocate them to play either a shooter video game or another genre of game over the same amount of time. The result showed that those who were assigned to playing the shooter video game were able to elicit faster and more accurate attention allocation, enhanced mental rotation abilities and higher spatial resolution in visual processing. A study done by Kim et al., (2008) alongside a U.S representative

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sample has concluded that spatial skills have a role in predicting achievement in science, technology, engineering, and mathematics (STEM). Furthermore, STEM areas have been constantly linked to long-term career success and are said to be very critical in the coming century.

Preliminary research was able to demonstrate that these cognitive advantages display significant changes in neural processing and efficiency. A recent study using functional magnetic resonance imaging (fMRI) has discovered that the mechanisms that regulate attention allocation were less active when a challenging pattern-detection task in regular games as compared to the non-gamers. This has brought the researchers to hypothesize that gamers are able to allocate their attention resources more efficiently and able to effectively exclude irrelevant information [2].

3.2 Visual Attention

Green and Bavelier (2010) had discovered that video games were associated with excellent performance on several visual attention tasks [12]. In a flanker task where the participants are instructed to identify a target visual stimulus at the same time accompanied by a similar or different distractor stimulus. It was discovered that video gamers were influenced by the type of distractor stimuli where they would react faster when the distractors were the same and slower when it is different. As for the non-video gamers, it was shown that the flanker task was somewhat difficult for them as they do not have the extra attentional resources to process the distractors. The relationship between playing video game and excellent visual attention performance can be further strengthen by the fact that video games outclassed the non-video games on a task where they are asked to rapidly count the number of squares presented on a computer screen known as the enumeration task [12].

3.3 Educational Video Games

Video games can also offer educational knowledge and skill through educational video games. Gentile and Gentile (2008) had stated that video games are able to become excellent instructors because computer-based instruction emphasizes and reinforces distributed practice, gives out clear objectives, and the learner needs to participate to clear the task [7]. To confirm whether educational video games can affect learning and behaviour in a medical context, Ochsner and Lieberman (2001) allocated diabetic youth randomly to play a non-health-related video game or a diabetes self-management video game for 6 months [13]. It was concluded that those who played the diabetes-related video game had heightened their self-knowledge regarding their disease, talked more regarding their disease to others, and reduced visit to emergency room as compared to those who were only playing the control video game. At the end, he had stated that these are evidence that educational video games can be effective, communicative as well as have behavioural effects related to what the game offers [14].

4.0 CONCLUSION

While numerous research has already been conducted on the adverse effects and harm of video games in relation to the mental health of the community, there is still much to investigate the benefits of video games in the current community. Given how video games nowadays being easily accessible to people of all age groups, a more innovative approach to mental health intervention through the development of games is a direction that game developers can work towards in the future. With proper regulation and care video games hold the potential to promote well-being, including the prevention and treatment of mental health problems in the community.

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